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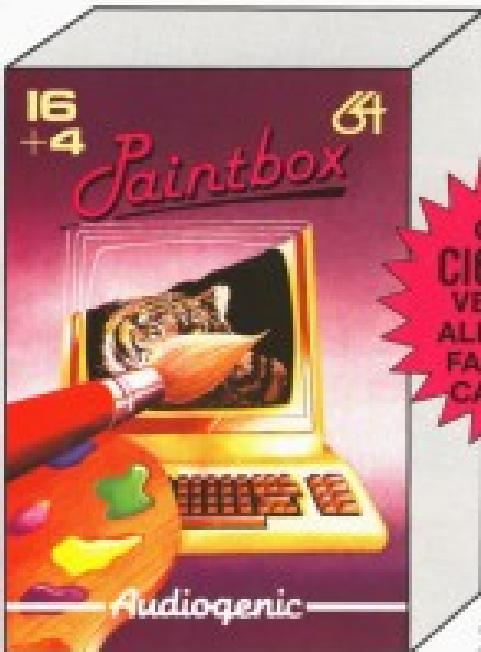
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Precise price

FOLLOWING the review of Supersoft's C64 in the July issue of *Computerspiele Heute* (page 86), I should be pleased if you would advise what makes that PreciseSoft title so much more expensive than even better value by launching the product at £39.95, instead of £99.95 as originally planned.

Keep up the good work!
John Sommer
Managing Director
Precision Software Ltd

Reset ideas

THEY HAVE a reset switch fitted to my 64 for about a year, and I find it most useful for halting non-user programs, basic especially, because the memory is not actually cleared when the reset is used. With the help of a small machine code program we can catch it back together and fix, amend and run again if we like. First load and run the test program, then load the programs you wish to fixup. When it starts, press the reset then type SRS 50000, then you can fix the programs. This can be very useful in certain situations.

James if you get really stuck:

Another one which some readers might find useful is for unloaded basic programs such as *Maths Miner*, load the game, press reset then type POKE 16772,23456POKE 16772,23456POKE 36773,23456POKE 36773.

For people concerned about their guarantees who don't want to stick best guarantees out the user gets or holds any items in the machine, here's how to make a plug-in reset switch. First, buy a small pack to make switch and a six pin plug-in fit the serial port, the same as is in the disk drives. Then solder the switch to pins 5 and 6 of the six pin manual, plug it in, and that's it. If you have a disk drive connected, then it can plug into the back just the same. It can be left in place indefinitely, and it will run integrally with the normal working of the computer in any way.

Heads Mr Dens's Basic Computer programme:
 10 POKC C = 16 to 25
 20 READ BYTE
 30 POKE 58000+C, BYTE
 40 NEXT C
 50 DATA 0, 1, 160, 1, 143,
 43, 32, 51, 163, 34, 131, 43,
 151, 47, 153, 49, 163, 59,
 153, 46
 60 DATA 133, 46, 133, 59, 96

P Dens
Software
Co. Dens

games if you get really stuck. Another one which some readers might find useful is for unloaded basic programs such as *Maths Miner*, load the game, press reset then type POKE 16772,23456POKE 16772,23456POKE 36773,23456POKE 36773.

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 20 READ BYTE
 30 POKE 58000+C, BYTE
 40 NEXT C
 50 DATA 0, 1, 160, 1, 143,
 43, 32, 51, 163, 34, 131, 43,
 151, 47, 153, 49, 163, 59,
 153, 46
 60 DATA 133, 46, 133, 59, 96

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Helpline hints

I CONTRIBUTED over more with P. Den's plan C.R.L. July issue for an Amiga's helpline! So here we go for all of you frustrated subscribers having sleepless night over BasicBasic!

Experiment or **Basic Machine** offer any trouble services, as soon possible. Could anyone in return, save me from being ripped apart after following up the test in *Closed*? I'm also in great need of assistance with *Laser 91*, *Basicball*, *M. Asteroids*, *Robotics*, *2000 AD*, *Amstradsoft*, *The Backlash*.

Officially approved by Commodore, *Basicball* is poised to become that Z80-64 is an 8-bit mon all over the Amiga countries, and many parts of Europe, and we are currently engaged in developing a similar product for the C64.

Zedler and RCL Software have been closely collaborating on developing high standard Amiga software. And the first result of this collaboration was the joint development of the Amiga newsprocessor *91 Options Editor* for the Commodore 64. This product was launched at the 64th Commodore Show in June. *Basicball*, *Zedler*, *RCL*

1531 to Vic 20

MY BROTHER has a C16. I have myself a cheap Vic 20 on his circuit, in there a cable available that would connect between the cables of his Amiga and the Vic 20, so we could share it between the computers?

Andrew Banks
Oxfordshire
UK

WIMBLEDON most manufacturers a cable enabling the C16's 1531 cartridge slot to be used with a Vic 20, or made by able to supply the parts to make a connector. Any suggestions, anyone?



Don't Buy another tape....

(OR DISK!)

...until you've seen the low, low prices in our Commodore Club magazine. Light up your bank manager's face by getting Shadowline for just £3.99 (saving £4), seal yourself a bargain with Spyhunter at only £4.99 or join the privileged by buying Elite at £11.99 instead of £14.99. What's more, if you get an order in before the end of August you can claim a FREE GAME. That's right, an order worth £12 or more and you can take Maxxim's Kick Start (which was given a rave review in the July issue of Jag), or the Spectrum game Finders Keepers — recently released on the Commodore 64 — at no extra cost.

So what's the catch, we hear you say? How many tapes must I commit to buy? The answer is none. If you become a subscriber to our magazine (which is available only by post) then we send you as a member of our software club at no extra cost. It's then up to you whether you buy anything or not. There are no minimum purchase requirements.

The magazine is published six times a year and is packed with product reviews (including lots of screen shots), game playing tips, competitions to enter and more. Hurry now — if you take out a subscription within the next four weeks we'll give you a £1 voucher towards your first purchase through the Club.

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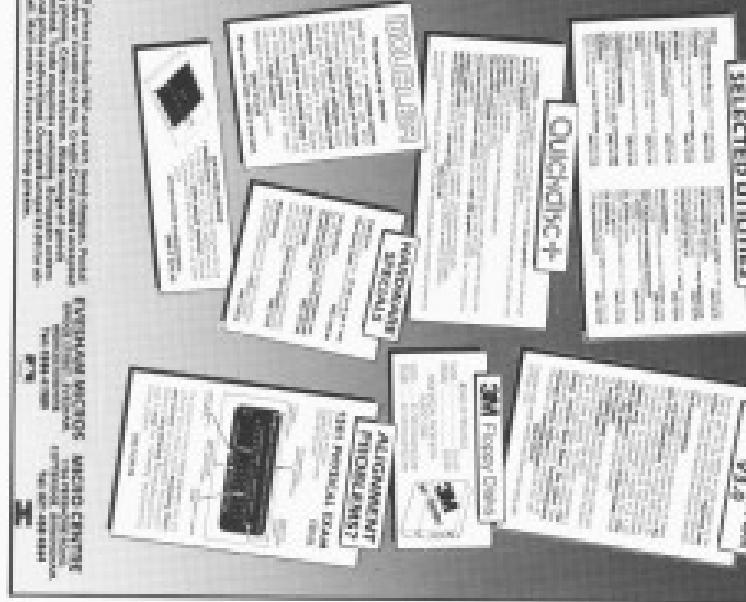
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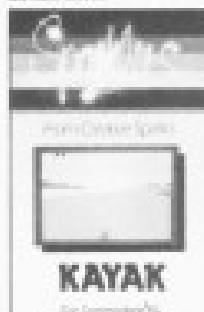
Loading challenge

COMMODORE Research has introduced a budget priced address load algorithm tape for the Commodore C16 computer, or any compatible data recorder. Like Imagenetics MicroV's Autoload 2000 product, the Challenge tape allows you to store the load algorithm of the tape deck until it is ready to run the tape. This avoids loading errors caused by the various load programs.

"You'll have to supply your own monitor supervisor to use the country but at £19.95 it's certainly the cheapest way to set up your C16 programs. Contact Challenge on 0791-44062."

Wizards and water

TWO NEW 64 disk titles from Thorne-EMI's Spectrum budget range will be in the shops soon. Merlin and Rapat, both cost £2.95. Merlin features the powerful magician battling evil spirits and the deadly Hadesman in an attempt to complete his magic book. Imperialists have to be watched out of the air, and anti-ogres have to be stopped before Merlin can win through to the next screen.



KAYAK

See Computer Games

KAYAK is a canoe slalom simulation, in which you have to control your craft through 25 gates and dangerous rapids, taking the clock to become the World Champion.

Contact: Thorne-EMI, Thomson House, 266 Farnborough Road, Farnborough, Hants, GU10 4JX.

More from Supersoft

SUPERSOFT'S latest batch of releases includes utility programs for the 64 and the C16-Plus/4.

Word Perfect is one of the first word processors to appear for the C16-Plus/4. It's a machine code program allowing up to two pages of A4 text to be entered, and displaying text on the screen exactly as it will be printed out. Maximum line length is 160 characters, and facilities include insert/delete, copy line, text setting, margin and centering. Word Perfect costs £12.95 on tape or £14.95 on disk, and is also available for the C164 64, at £17.95 and £19.95.

Music Master, the popular 64 composition package, has been adapted for the C16-Plus/4.



New or both copies can be played using the UNIVERSITY keyboard, and there are five new programs.

Advanced banking routines to accompany your compositions, as well as extensive editing facilities. Music Master 64 is available on tape or disk, at £12.95 and £14.95.

Instant Recall is a filing system for the 64, which allows you to store up to 30,000 characters of information. Particularly well-suited to holding data on hobby records, Instant Recall can be used with a suitable printer to create address labels or reports. Price is £10.95 tape, £11.95 disk.

Next month we'll take a look in more depth at some of these programs, meanwhile contact Supersoft at Winchester House, Gillingham Road, Wimborne, Dorset, BH21 1BB.

concerning on the C16, where there's still a demand for new games, especially at budget prices?



Contact Solar at 17 West Drive, Bury, Lancs, BL9 5AQ.

Solar's C16 strategy

SOLAR Software has launched a series of budget priced games for the C16-Plus/4, and claim to have sold 10,000 units within a fortnight of launch. Solar's Brenda May explained that the games, all priced at £9.95, are conversions of successful Vic 20 titles by programmer John Shaw. "John has written a routine which enables him to convert the Vic programs directly to the C16. All the games are tested to avoid conflicts with the Vic originals." Titles include Mission Mars, Knight Run, Knock Out, Crossfire, Alien Attack, and Quark Chase.

Solar Software also plans to

produce a full-price C16 game in the near future, as yet untitled. The budget titles are being distributed by Comsoft, Lawrence, Lancs, and a range of smaller distributors, although Solar has not yet been able to conclude a deal with the chain stores.

"We're not launching the 64 at the moment," commented Brenda May of her last two games, Monday Magic and Jungle Quest, which will still sell despite good reviews and extensive advertising. "We've now re-released them as budget titles, but we feel that the market is already so saturated that we're

German EPROMs

LIGHTWEAVE Leisure has announced further details of their range of Commodore products imported from West Germany. The EPROM burner allows you to plug a special Flashable Programmable Read-Only Memory chip into a motherboard, and load it with your own programs, in effect creating your own "cartridge" software. The EPROM burner plugs into the one port of the 64 or C16, and the 88 or 128k mother boards plug into the cartridge port. EPROMs can be erased by ultraviolet light and reprogrammed. The smaller

board, with EPROMs loaded, can make the software available to the computer in the sections at three different addresses.

Also available is a Test Board which erases all data, address



bits and pilot wires from the cartridge port. Full instructions and operating software are included. The EPROM burner costs £24.95, £24.95 board (£14.95, 88 board £12.95), and the test board £14.95. Photo Lighterex on 081-609 3050 for more details.

Pascal in words

PUBLISHERS Steve Saunders are to bring out a title dedicated to the Oxford Pascal package for the 64, reviewed in our July issue.

Author Ian Sinclair has written over thirty books on using home computers, and claims that Oxford Pascal is the first good implementation of the language available. The foreword to Oxford Pascal for the Commodore 64 is by PCW's Alan Weller Jones and Tony Wilkes.

Contact Holt Saunders at 158 Ansdell Road, Eastbourne, East Sussex, BN2 0LN.

Digital dreams

CRL'S LATEST Commodore products include a video digitiser, first seen in this country at the Computer Show in June, and a disk-based game. Both products are developments for the company, which has



previously concentrated on computer software.

The Video Digitiser Module, produced by the German firm Print Technik, costs £199.95, and is available mail order only until the PCW show in October. Plugging into the 64's serial port, it enables signals from videotape or a video camera to be stored in digital form in the computer's

memory. Images can then be printed out in black and white using the MPS-80, or in colour using a range of colour printers.

The image is displayed on the screen in four levels of grey, which can be coloured separately

using the function keys. CRL say that later developments will allow the digitised pictures to be incorporated into users' own programs. The disk-based game is *Whacko!*, a sophisticated "platform game" available at £12.95 on disk only.

Reviews in due course. Manufacturers, contact CRL on 018-288 00-310 2000.

Ultimate's Blackwyche



ULTIMATE'S new C64 title will be Blackwyche. Containing the adventures of Sir Arthur

Blackwyche, hero of Staff of Kent and Lancashire, Blackwyche is set on a haunted castle. Sir Arthur's task is to find the ship of the curse which has fallen upon it, by finding the Captain. Under the spell of the evil Crystal Staff, the Captain haunts the depths of the ship. Only Sir Arthur, with the aid of the ship's log and the magic Bell, can save him and break the curse. Blackwyche uses the same interactive animated graphics seen in Staff and Lancibot, and will sell for £9.95.

visitors include The Great American Cross-Country Road Race, which allows you to plan your course across the States and compete with opponents in a fast-moving test of skill and endurance; and Bear in House, a bike-racing simulation based on the famous sporting marathon. Both retail at £9.95. Contact Activision on 01-466 7388.

Activated

INTERNATIONAL software company Activision has appointed a new UK managing director, and announced details of some C64 titles.

Hugh Ross Purcell, formerly of BBC/A/Commodore sales, takes over as MD in September.

New games titles from Activi-

Precision plans on C128 software

PRECISION Software's version of Superbase and Superscript for the C128 will include some unique facilities.

Planned for launch at the PCW show in October, the packages can be loaded into the C128 simultaneously, and can exchange information. Superbase and Superscript are already available for the C64/128, but Precision MD Nigel Livesey-Turner explained that programme writer Simon Butterfield had managed to produce an even more powerful version of the programs by using the full potential of the C128. "Superscript uses a full 128K, with a large font size, but it's possible to load Superbase into that free area if you're willing to accept the reduction in size. The two programs can then act in a fully integrated way."

Moreover, since Superbase and Superscript are highly "disk-active" programs, the combination on the C128 can take advantage of the improved performance of the 1571 disk drive. "The 1571 is ten times faster than the old 1541. Superbase and Superscript on the C128 are able to use 'burst mode', in which the 1571 operates twice as fast again".

Precision intends to keep prices of its C128 software within the budget of home users, so the C128 versions of Superbase and Superscript are to be priced at £29.95 and £29.95 respectively. Although packaged separately, Precision may offer the two packages together in a money-off deal at a later date.

Contact Precision at 8 Park Terrace, Wincanton Park, Buntingford, Herts, LU1 7BB.

The Show is go

U.S.A. THE voucher printed below is good off the admission fee for the Computer Horizons Computer Show at the National Exhibition Centre, London, on Saturday and Sunday, 20th/21st October.

The show, arranged by Computer Marketplace in conjunction with Computer Horizons, will offer something

for every Commodore computer user: game players, application software users, and business users. Just cut out this coupon — photocopy it if you like — and you can get £5 off the entrance fee.

Exhibitors should contact Computer Marketplace, 29 Orange Street, London WC2H 7HT, 01-520 1612.

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Talking of speech recognition . . .

Analog's Voice Master for the 64 will digitise and replay your own voice, recognise speech and play music. Tony Mills puts it through the paces

AnalOG'S unique Voice Master gives the 64 a number of capabilities which would have been unimaginable when the micro was first released. For a start, it enables you to digitally record sounds and play them back at different pitches; it also responds to sound inputs, and can act as a musical instrument by playing notes on the SID chip. Has all this been crammed into one package?

Voice Master consists of a bracket including a microphone on an adjustable arm, a reader and its bracket attachment which plugs into a joystick port, and software on disk.

Manufactured by Cognix in the US, the whole system seems very well put together, and faultless with no problems at all.

Initial

The first test to carry out is by using the demo program, which gives you an idea of Voice Master's abilities without going over all the complexities. On loading the software you are invited to speak into the microphone, which plugs into the master unit. Using the function keys, you can then reproduce the sound you have recorded, either "straight", or with a moderate "decelerating" effect, or with an accelerating repeat which makes your voice higher and higher until you sound like Neddy.

The actual quality of the sound sampling is good, although you won't get the best from the unit unless you plug your 64 into a hi-fi amplifier. The length of the sample can be traded off against the quality, although the literature doesn't make clear what the maximum sampling time should be. Still, the quality of those samples is almost as good as that on well known games like *Ghosts 'n' Goblins* or *Impossible Mission*. Using the main program, you can store up to 32 sound samples. Speed and volume of playback, as well as sampling rate, can be set by simple Basic commands. The voice recognition software works by comparing the frequency spectrum of a sampled input sound with that of a stored "template", produced through a "training" routine in which you speak the required words several times, and the software produces an "answer" against which to compare later input. The sounds can be displayed in the form of a bar chart.

On the voice recognition front alone, the Voice Master has impressive potential for control of electrical equipment, word-processor games, and so on. There are also musical applications made possible by the Voice Master



software; you stand sing or hum into the microphone, and the program averages out the frequencies, and plays the SID chip in the bottom note, in a wide range of programmable tones and octaves. Music can be displayed on a menu, stored and edited, and printed out.

Potential

Perhaps the most interesting aspect of Voice Master, though, is that the voice samples it makes can be stored and used in Basic programs in a fully transportable form — in other words, you can write a game using Voice Master sound effects, save it on tape or disk, and give it to a friend who will not need a Voice Master in order to get the benefit of the lovely sound effects. You another can produce games with speech effects such as those in

Ghost Busters, without having to call in the services of expensive American software houses.

Voice Master may seem a trifling expansion at £59.95, but the potential of the device is only limited by your own imagination. Having had already put out several games incorporating Voice Master speech effects, we'll just wait a quick dozen of its qualities, just look out for that one in *Ultimate Pipe-A-Soda*, or *Jump Jet*. More programs, including educational titles, are on the way.

Conclusion

Next month **Commodore Horizons** will have an exclusive competition in which you can win a Voice Master from Analog. If you can't wait sing happy to get your hands on one, specialist retailers are already stocking the unit, and I would anticipate ready wider availability once the telcos give the green light to see and hear this amazing device. ■

Hardware: Voice Master
AnalOG CRM 04
Price: £59.95
Supplier: Analog, Unit 14, Victoria Industrial Park, Duxford, Cambs. CB22 4JN

C128

PRICE EXCLUSIVE

The news you've all been waiting for is out — **Commodore Horizons**, the only magazine represented at the trade launch of the C128, reveals the all-important retail price.

COMMODORE'S trade-launch of the C128 revealed that not only is the machine a powerful competitor in terms of facilities — it's a winner in price, too. The C128 will be available from 1st of September at £299.

As most readers will already know, the C128 is designed to complement the existing range of C64 machines, not necessarily to supplant them. The 128 operates in three modes:

- 64 mode reproduces all the features of the C64. It's completely compatible with all C64 software and hardware, making it possible to use 64 cartridge, disks, cartridges, printers, monitors and monitors.

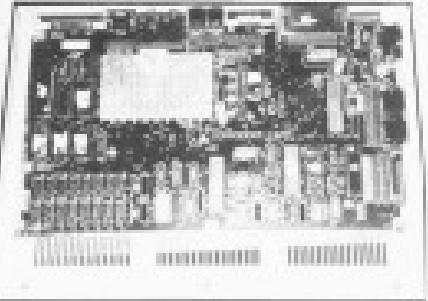
- 128 mode has 119 KB RAM available for BASIC programming. The new BASIC dialect, V2.0, has over 140 commands, including commands for sound, music, graphics and

animation which are only lacking on the 64. 128 mode also has a built-in machine language monitor, forty or eighty-column screen display, and uses the 14-key numeric keypad.

- CP/M mode is designed for running professional business software written in the CP/M format. Most CP/M software is written to use 80 column screen display. However, the forty column screen display can be selected,



The C128 model's distinctive interior allows reveal the Z80, 6510, RAM chips, bank-switching controller, I/O circuitry, video chip and 8502. The screen graphics were produced with a 10-line program; the memory map shows the machine's full programming potential.



and needed to display the full eighty columns. Disk in the IBM, Sanyo, Commodore and other CP/M formats can be used with the 128 disk drive.

To make the most of the 128's facilities, you will probably need an eighty-column 1980 monitor and the 1571 disk drive, which runs 50% faster than the 1541. Although no

details of price for these have yet been released, it appears likely that the complete 128/1571/1980 system will cost around £650. The 1980 monitor comes in two models, the 80-column monochrome 1980-M and the 40 or 80 columns colour 1980-C.

The C64 will continue to be sold at £399, though whether it can compete with the

128 at this price remains to be seen. Commodore's plans seem to rely on making more money on peripherals than on machines; market forecasts indicate that although the size of the micro-buyer market is decreasing, the sales is going up to meet even the printers and disk drives rather than cassette decks and joysticks. ■

You've never seen anything like it.

A Mouse that's light years ahead of anything else of its kind, with the best graphics software ever written for the Commodore 64, 128 and SX64.

It's packed with features – you'll be amazed at what you can do with charts and creative designs.



We've given the Mouse a wide variety of brush and spray shapes,



different screen textures and a whole palette of pre-programmed background patterns.

(You've the option of designing your own, too.)

There's a huge choice of colour, 16 foreground and 16 background, useable in any of 256 combinations.

You can draw shapes, fill areas with textures and special

patterns, and move designs around. Or put clear, attractive business graphics on paper for professional reports, charts and newsletters.

With clear on-screen icons and a-touch pull-down menus, every operation is kept perfectly simple.

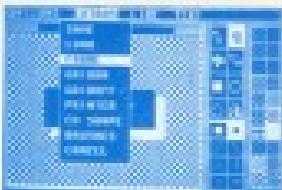
Drawing a circle, for example, is a simple matter of marking the centre, moving the mouse outwards until you've found the correct size and then pressing the 'select' button to plot the circle.

Put all that together and you've a stunning graphics package – at the touch of a finger.

It will even integrate happily with our forthcoming business software.

The Mouse comes complete with disk and cassette software, full instructions and a price tag of just £34.95.

Of course, we have to own up and admit that we have a rather famous rival. A perfect rip-off at a little under £2,000.



Datex Mouse. There's nothing in the world to touch it.

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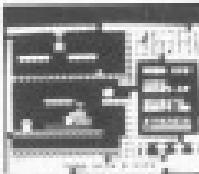
SOFT HITS

No sore loser

A surprisingly sophisticated arcade adventure with lots of graphics and some intricacies, *Finders Keepers* is a continuation of a successful Speedball title. If memory serves correctly, the options in this one are standard:

you control a little knight, making his way through his castle in search of treasure and cash in order to win the hand of a beautiful princess, and a place on the "Pagan Table".

Apart from the usual left-right-jump controls, there are also options to get, drop or trade objects. Since the amount you can carry is limited, you must find a trailer every so often to convert your findings into cash.

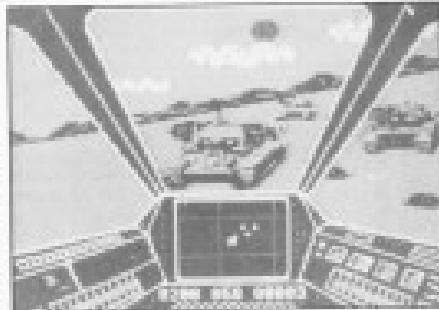


The mouse's grid, and there are lots of unexpected bonuses

Plane amazing

At incredibly impressive air combat simulation, *Skyline* goes to show that the 3D is still capable of being coaxed to even greater heights of graphic sophistication.

The *Skyline* flight deck here is armed with rapid-fire lasers, heat-seeking missiles and defensive shields. Your mission is to light off the enemy bases attacking your command base. There are several missions selecting available training for air combat, for ground combat,



or both, or the real thing, with various combinations of enemy tanks, planes and mecha-vehicles seen from the pilot's

point of view, with accompanying sound and fluorescent maps and explosions. There are lots of little extras, such as guided missiles, heatseeker radar displays, altimeters, fuel readout, and so on. This isn't quite enough to make *Skyline* a convincing "simulation" — it's certainly a good arcade game, but if you want something realistic, go for EA's *Fighter Pilot: Star*, maintaining fun for short-cut-ups here.

Program: *Skyline*, 4d
Supplier: AmigaSoft!
Price: £12.99
Graphics: *****
Sound: *****
Gameplay: *****

short of a grand version for the CD.



Defend or die appears on its just a Defender copy, and the temptation is to pass over it. On reflection, though, how many good versions of Defender are there? Apart from Alligato's *Defender: Guardian I* and

the graphics are quite dazzling, big, detailed space vehicles seen from the pilot's

interesting. You control an alien armed with a plasma laser and energy bombs. The mission is to fly over the home landscape, picking humans off and destroying the alien stations. They come in many varieties, including slow-moving bugs, faster insects, light-infiltrating clouds, swirling pods and fast-moving snakes. All are intent on smashing you into a million pieces. Watch a great explosion whilst avoiding the humans at the

computer can shoot, tackle and attack quite convincingly, under joystick control.

There are no corners or edges, but you can beat your opponents when faced with a swarming THUMP! and bounce balls off the side walls.

Extra features include a postures option, which is poor graphically and not much fun in playing, and software sounds which could be better. When the crowd sings "Here we go, here we go..." before the kick-off, it

turns sour. With the usual futuristic, powerful, bright colours, snappy sound effects and high-score table, *Defend or die* is a good example of a joystick-fighting space-action which demands the fastest and most precise reactions.

Program: *Defend or die*, 4d
Supplier: AmigaSoft!
Price: £12.99, £14.99 disk
Graphics: *****
Sound: *****
Gameplay: *****

Over the moon

How far you have to go before we get indeed, *Heavenly Football* is a follow-up to *Star Soccer*, the air football simulation, and looks very similar. The small players are truly well detailed, but don't move very convincingly from side to side; they're OK, but more UP or DOWN the field and the

speed of movement goes peculiar. The screen view scrolls



to follow the action, as in *Commander's Heavenside Soccer*, and the frequent team swap players or one against the

computer can shoot, tackle and attack quite convincingly, under joystick control.

There are no corners or edges, but you can beat your opponents when faced with a swarming THUMP! and bounce balls off the side walls.

Extra features include a postures option, which is poor graphically and not much fun in playing, and software sounds which could be better. When the crowd sings "Here we go, here we go..." before the kick-off, it

sounds more like one man shouting in a stadium of 8000 shouting into a megaphone speech digressions — which, in fact, it is. So the speech doesn't add much to the atmosphere.

Quite playable, though not as polished as it might have been.
Program: *Heavenly Football*, 6d
Supplier: AmigoSoft
Price: £14.99 cass, £19.99 disk
Graphics: *****
Sound: *****
Gameplay: *****

SOFT HITS

SOFT HITS

What is this Thing?

Zoolander? Gremlin's latest 3D game introduces the best new hero for ages, Thing (or a Spring), who bounces through this arcade adventure accompanied by multiply many sound effects. It has to be said that although the graphics are great, what really makes this game is the unique, marvelous Comedy.

Trouble with bugs

Doodle-Bug has a marvellous lot of artwork on the screen, depicting two increased varieties of sky-screeters chasing each other around futuristic towers. Now, since this is a game for the unengaged VIC, it

is Western/Punk music andappy sound effects.



Thing's job is to bounce through the two factories, searching for the right pieces which will give him a clue how

wouldn't be hard to expect anything that exciting of the game, and in fact what we have here is a set of odds between Pac-Man and Luigi's.

Now little bugger has to make his way through a maze full of food parcels, picking them up as he goes. Chasing after him are several angry buglets — you can select the number from one to five. Your only chance to avoid them is to use the fact that they

in destroy the Mad Castle. The factory is made up of the obligatory ladders, platforms, slides, disappearing surfaces, and so on, and the factory's servers, glands and factory machines, are all out to stop Thing and make him run up. In order to thwart them he must leap around them, and search out oil supplies.

The factory has several levels, each of which is several screens in width. The levels are connected by lifts, which I can get to operate (probably because I haven't found the hidden

switches). However, Level One is challenging and, sorry enough, and I suspect it only gets better. All above average for this sort of thing, and worth getting for the soundtrack alone.

Program: Thing on a Spring, £4.

Supplier: Creative Graphics

Price: £19.99

Graphics: *****

Sound: *****

Gameplay: *****

abilities to find another path to get to you. But the buglets are very intelligent, always taking the shortest route to you.

Novice programmed, and perfectly aimed fire.

Program: Doodle-Bug, Vic.

Supplier: Mastertronic

Price: £19.99

Graphics: *****

Sound: *****

Gameplay: *****

Time for the C16

This isn't clear — why I hasn't anyone thought of it before? Although the main idea is pretty jaded — a sort of Scrabble game through various stages, deciding far from memory craft and destroying targets along the way — the gimmick is that Timefly gives you three stages on the screen all at once.

In the top screen, you plot a flight over a mountain range; the middle, a jumper through

inside the bonus; a submarine through underwater caves. In

three parts, the top and bottom half show the current locations of the Black and White spies, and indicators at the sides show their status and the weapons they're using. The aim of the game is to find a secret weapon hidden on the island, then to escape by submarine. Stay too far through the swaying society and you'll end up in the sea.

Again, you can lay traps for your opponents, but in the Island Caper you have to traps the traps yourself, using various tools and whatever objects come

cannot pass through the turns stated around the maze.

GOALS...
AUGUST
1. Find the
secret weapon
2. Escape
3. Kill the
enemies
4. Win
the race
5. Find
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hidden
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Wet fish

Although most have some sort of a health bar, from the cringing *Kangaroo*, how this immediately becomes off-putting. *Match Fishing* is supposed to be a simulation of the thrill of competition angling — all it captured for me in the short volume of spending hours half-sleeping on a river bank.

After randomly selecting the number of players, entering the names, choosing the type of boat,



tackle, line strength and so on, you are given a glimpse of the

length of riverbank which has been assigned to you. Switching to an extremely magnified graphic screen of the rewards, there's then nothing to do but wait until one of the prey members flashes on and off. You then raise yourself from your leisure long enough to hit the appropriate number key, and you're rewarded with the most pathetic representation possible of an angler reeling in an overhauled-looking rodent.

If I was Jack Charlton, I'd take the moneys-punk, disappear off to a dusty riverbank somewhere, and try to forget the whole thing.

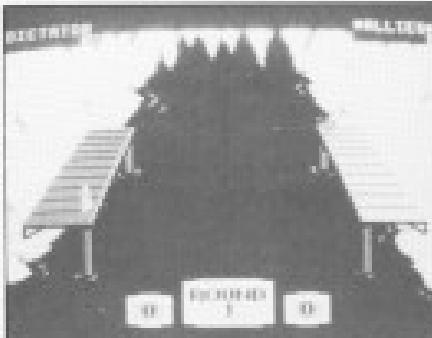
Program: Jack Charlton's Match Fishing, £4
Supplier: Allegro
Price: £6.99
Graphics: *****
Sound: *
Controls: ***

On the Beach

Conceived as the original *Beach Head*, claiming that despite the impressive animation and graphics, the game did not stand up to extended playing, did little to stop in matching up big sales. I expect things will be the same with *Beach Head 2 — The Dictator Strikes Back*.

As in the original, there's a great deal of violence involved in your task; three attempts to defeat the baddies — the time the remains of the intended add-on for the first — "You Bet?", "Meh?" and so forth.

The stages include attempting to destroy machine gun emplacements, escaping passengers crossing the ocean under fire from tanks and armoured cars, a helicopter



escape, and an underground battle with floating ticks across a ravine. As usual expect, there are one or two player options

and various levels of difficulty. Overall this doesn't add much to the original, but thousands of players will want to get a review.

My major objection is that each stage takes too long — although I suppose that if you enjoy the sort of game, then this is a good feature.

Adding software spin-offs in a game gives it an extra dimension, but the gimmick is bound to wear off soon. Hopefully the Amiga programmers will then turn their prodigious skills towards original ideas, rather than rehashing old ones. *Beach Head 2* deserves to do well, but if there's a *Beach Head Three*, I'd like to think it could be even better.

Program: Beach Head 2: The Dictator Strikes Back
Supplier: US Gold
Price: £9.99
Graphics: *****
Sound: *****
Controls: *****

Warlocks

One of the three deepest *Orcs & Wizards* adventures for the C64, *Sword of Destiny* manages to pack quite a lot into 16K. As usual with this sort of program, there's a lot of scene-setting dealing with evil warlocks, bone warriors, Abyssals of Death, magic, mystic energy and stolen hearts. But you don't want to



know that — you just want to know what you get to kill, don't you?

The baddies include ghosts, skulls, vampires and so on. Their single sword move makes short work of them, though, adding to your feelings of power. There are many floating objects to be found, each one of which opening the way to the next part of the Abyss. If you find yourself stuck at any level, you can take a ride on top of a fast train, which will bounce you up to another level.

Joystick or keyboard options,

and reasonable sound effects and music, complete what is a clever C64 offering. Also available from Gavelside for the C64 is *Dark's Unknown*, which is playable, but not as sophisticated graphically.

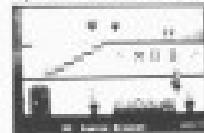
Program: Sword of Destiny, C64
Supplier: Gavelside Computer
Price: £6.99
Graphics: *****
Sound: *****
Controls: *****

Teddy boy

The Daily Express's popular *Teddy cartoon*, here, Report, is off this year, and presumably in part of the celebration his friends are having a party. But, alas! Report's lost his friends, and to find them he must follow a trail of party invitations through the capricious radio. In

his way are six soldiers, fortifying vampires and dangerous traps, but the lovable little chug takes them all in his stride. The animation, particularly of Report himself, is very good, but the backgrounds leave something to be desired. The game will obviously appeal more to younger players, and won't set much of a challenge to arcade fansatics. Although the whole

package is very nicely done, with super music and the best teaching



screen for ages like ages, I couldn't help feeling that to

rely on the invasions Report should have been allowed to get past with a chairman in the middle of the party. I know, I'm cynical.

Program: Report & the Teddybear's Party
Supplier: Argus Price Software
Price: £7.99
Graphics: *****
Sound: *****
Controls: *****

Charts

Top Twenty CBM 64 Games

- 10 Demiseers
 - 11-1 Fine
 - 1-1 Way of the Exploding Fox
 - 12 Sofiad
 - 13 Pitstop 2
 - 15 International Basketball
 - 17 Thriller Surge
 - 1-1 Fleety Horror Show
 - 1-1 View to a Kill
 - 19-20 Impossible Mission
 - 15-16 Jim Be Wily 2
 - 18-19 Hobart's Diving Plan
 - 19-20 Captain
 - 14-21 Bloody Bob's Nekros Rock
 - 19-20 Spafix 40
 - 18-1-1 International Tennis
 - 17-1-1 Drop Zone
 - 18-19 Entombed
 - 19-20 Crog's Revenge
 - 20-21 Stargazer
- Kayak/US Gold £3.95
Festivals/Amesoft £14.95
Melbourne House £3.95
Infocom £4.95
Epyx/US Gold £3.95
Commodore £5.95
PSS £3.95
CPY £3.95
Domesoft £10.95
Epyx/US Gold £7.95
Software Projects £9.95
Micro-Gen £9.95
Palace £7.95
Big S/US Gold £5.95
Microsoft £9.95
Commodore £10.95
Microgen/US Gold £9.95
Ultimate £8.95
US Gold £8.95
Virgin £8.95



Bubblers

- 1 On Field Festival
- 2 Amazon's Warior
- 3 Cookin' Cookin's Cricket
- 4 Tim Laver's Cricket
- 5 Knockout

Activision £70.95
New Generation £7.95
Audiosonic £9.95
Popsoft £8.95
Alligato £8.95

Top Ten CBM 64 'Non-games'



- 10 Met Office
- 1-1 Moon Books
- 2 Simon's Radio
- 3-4 Charlie & the Chocolate Factory
- 5-6 'O' Level Science
- 7-8 Maths Simplified
- 9-10 Mr. Y
- 10-11 The Space Am. Missions
- 11-12 Encyclopedia Britannica
- 12-13 Pen & Paper Games

Galaxy Publishing £1-10
MetOffice £14.95
Commodore £10.95
IBM Microline £19.95
Commodore £4.95
Oasis £14.95
Micros £14.95
Microsoft £19.95
Commodore £14.95
IBM Microline £14.95



Bubblers

- 1 Rush
- 2 Gamma Doctor
- 3 Weather Code Tutor

Rush £14.95
Microline £14.95
New Generation £14.95

Top Five C16 Games

- 1-1 Grenada
 - 1-1 Drak's Dilemma
 - 12 BMX Racers
 - 1-1 Dark Tower
 - 13 Blagger
- Adventure International £3.95
Grainger £3.95
Mastertronic £1.95
Melbourne House £3.95
Alligato £6.95

Bubblers

- 1 Tower of Evil
- 2 Olympiad
- 3 Flight Path 237

Thorn EMI £5.95
Tytron £6.95
Antrax £6.95

Top Five Vic 20 Games

- 1-1 Rockman
- 1-2 Flight Path 237
- 1-1 King Tut
- 1-2 PEP
- 1-1 Handshake

Mastertronic £1.95
Antrax £6.95
Mastertronic £1.95
Mastertronic £1.95
Ocean £6.95

Bubblers

- 1 Mickey the Minkey
- 2 Doodling
- 3 Football Manager

Fredrix £2.95
Mastertronic £1.95
Addictive £2.95

All data compiled by RUMIC from a panel of specialist dealers.
Sales period - 6 weeks prior to July 5th 1988.

BEWILDED Frankie went to Hollywood and never looked back. In what must be the first port of call of "You've found the record, now buy the computer game", Ocean has come up with a program that's sure to be a hot hit. Thankfully, it isn't a case of leaders-and-platforms, with little Holly Johnson skipping around in search of gold discs — *Destiny Design*, the programmers behind *Shantae*, have put all their expertise in advanced programming techniques, such as masking and sprite lists, into this game.

Opening with the familiar shopping scenario of *Kirby*, the game allows you to control the shadowy figure representing your undeveloped personality. The first scene is a row of houses in Melroseville — your goal, the legendary Pleasure Cruise. There are over 200 tasks to complete along the way, and you'll need imagination, inventiveness and quick reactions to complete them all.

To attain the Pleasure Cruise, you must score 9000 Pleasure Points — which are awarded each time you complete a task — and touch the top or each of four bar charts shown on the right-hand side of the screen. These represent your Love, Pleasure, Wit and Luck factors, and over time they are inextricably



■ Where it all begins...

you will have become a complete person.

As you move through the scenes, the animation of the character and the brilliant windowing effect causing no-naggle with use, you should examine the detailed environments carefully. Use the joystick or keyboard to make your figure reach out for various objects, touch a cupboard or chest of drawers, and you'll see a window opening up on the screen beside you. You can then use the joystick to move the pointer to the various objects in the window, and select the Quiz icon the menu on.

There are fifteen different objects to find, each of which can help you to reach the

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FRANKIE GOES TO HOLLYWOOD

ETT morphs into Frankie decorates the box — but the central figure in Ocean's game is a shadowy version of YOU. Does David Fox love it or hate it?



Pleasure Done. Most of them suggest there are uses: a flask jacket, a bottle of milk, a cigarette and so on. Others will help you to balance your personality factors. You can only carry eight objects at a time, and each can only be used once. Use an object at the wrong time, and a window will appear bearing the message "Oh — whatever — is of no use here", and you'll have lost it. So, when you study your inventory, by pushing back the joystick and pressing fire, make sure that you select the right object to use.

Moving from room to room is accomplished simply by moving to a door, standing in front of it and pushing the stick forward. The scenes then instantly open sideways. The new rooms then instantly open sideways. The new rooms then instantly open sideways.

The scenes include living rooms, kitchens,

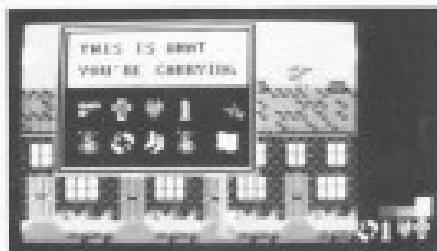
bedrooms and gardens, each full of the mundane objects of everyday life. But you must experiment with everything to find how it can and can't be finding the Pleasure Cruise — the



■ By the writer on the computer



■ What? What is a jewel?



■ A maximum of eight objects can be carried



FRANKIE

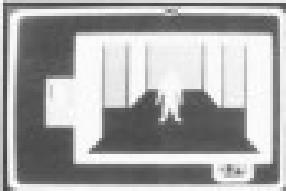
computer game



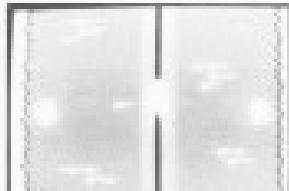
GAME: Frankie Looks to Hollywood
MICRO: C64 84
PRICE: £6.95
SUPPLIER: Ocean

telephone, light switches, furniture, and the various objects.

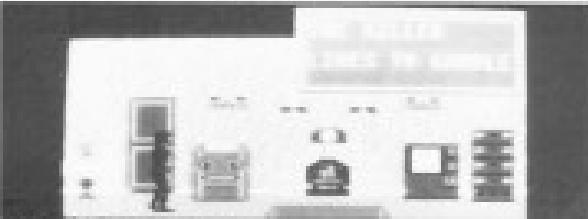
Things really take off when you select a video into the TV screen, and find yourself plunged into a series of arcade-type games. In these you have the chance to increase your personality ratings by beating the bumbling const. at a target, or you can shoot at various pests (flies, ants) in a bid to become Maggot and Gorbachev, save Mercedes from boozers, play games with a computer terminal, and more.



► play the variations of poker



► Passes the man house



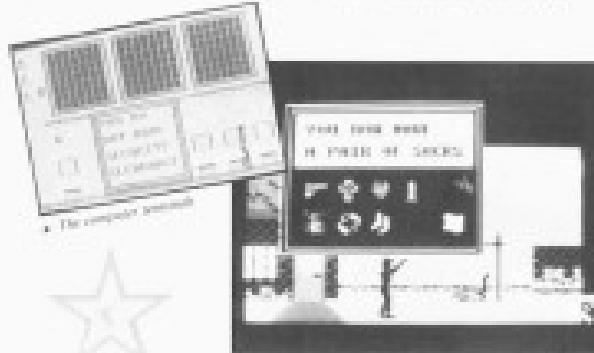
► Choose the class to enter the master course

You'll soon realize that there are ways and means of making your way around the inner rooms of the Phoenix House. Once you find your way into the Corridors of Power, you can map the labyrinth and plot your way to the Ultimate Screen, the Phoenix House itself.

There's also a master directory to solve, in which you must collect the clues which appear at random, return to the scene of the crime, and identify the killer.

However much you play Frankie, there seems to be many in fact. Thankfully, although Dennis Drayton, based with the developer of the Frankie philosophy, EFT's Paul Morris, they didn't feel obliged to include all 16 versions in the game -- such as a version designed to be thoroughly boring because it's so bad. Instead, the more sophisticated graphics, sound and operating systems have been brought together to create a game which is interesting at first sight, and which continues to provide plenty of excitement the further you progress.

It can't wait for the 16" version. ■



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TOWER

ADVENTURE

Melbourne's quest

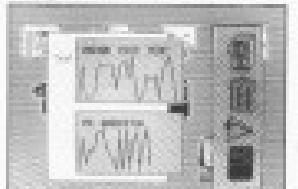
Ken Matthews gives you the chance to win copies of the new text adventure and investigate the icon-driven Fourth Protocol game

I've managed to drag myself away from life long enough to take a long and sober look at some of the latest adventures so far this month, and with so little space to play with, I'll get straight on with the jobs.

First up is *The Fourth Protocol*, based on the superb novel of the same name by Frederick Forsyth. The game is centred around a KGB plot to smuggle a nuclear device from the UK and demands it before the 1987 election, blame the 'accident' in a US base and replace the Thatcher government with a hard left government dedicated to withdrawal from NATO.

One plus John Preston, new head of the section of MI5 responsible for the security of buildings and staff throughout UK. In the first part of this thriller some NATO documents have been leaked and you are slowly drawn into a chase to uncover the traitor.

Should you gather the required information in part one and make the same route back, you will be awarded to MI6 and



allowed to burn the London traffic to touch down the road before disaster strikes.

Part three is a simple task — defend the device using the information gained in the first two parts. You will be backed up by the SAS but, not surprisingly, the KGB are quite keen that you should fail in your efforts and will do all they can to ensure that things go with a bang.

The first two parts are completely linear, but the menus are very simple to understand and quick to use. It is inevitable that the game will be thought of in comparison to *ShadowStar* but, personally, I feel that *The Fourth Protocol* is greatly superior in all respects, not least the pace of the action, and if you get off by four — give this one a chance.

In game one you won't need to leave your office at first, as messages and reports appear on the VDU, and the phone rings; you are in touch with your team of watchers until a memo from 'C' changes the course of your career — if you've got things right.

Game two gives the protagonist a chance to get the map-drawing gear out, track codes and surround yourself with shapes of paper and cigarette smoke as you blunder around the capital in search of the clue to discover the location of the bomb and get the password to part three. The icon system can be a little cumbersome but the simple conversion that is normally accomplished by one letter commands but this is more than compensated for by the icons used to manipulate items, thus avoiding a frustrating search for the right phrase to achieve success.

The highly original plot and inspired programming have resulted in produce the most absorbing adventure I have seen for a long time — it deserves to be a best seller as much as the novel on which it is based.

The second offering this month is a starkly different... *Russell's Superhero Adventure*, which is aimed at the very young adventurer.

The aim of the adventure, like the TV series, is simply to defeat the devil Scary Campbell and his band of cronies. The game has been written by A&T's Brian Howarth and has graphics and animation of the same high standard as *Crackdown*.

The adventure itself appears to be a pot pourri of situations from the TV series which left me at a complete loss from the start. So, after a visit to Hospital, the sweet shop and a frantic search for porridge, I had to faceoff to Superhero and decided to leave it to avoid loss of the demonic old lady.

Back onto safer ground, we will round off this month's review with a brief look at *Malvern Gliders*, follow-up to *Classic Adventure* — *Mordor's Quest*.

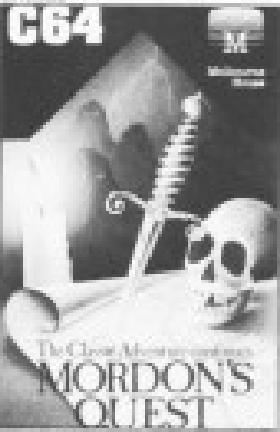
Properties

Your task in this game is quite clear, you must simply save the captive glider destination. The game has over 100 locations... which puts me a little off a third of the way through... and features a plot which carries you from the distant past to the far future to assemble parts of the immortality machine that will allow Mordor to regain his grip on things and allow you to get your grips on until treason.

This epic quest begins in a vast shelled house brimming of the underground tunnels of similar names which may have inspired the title and looks, you guessed, jungle and prehistoric properties, so an action play where things really begin to come together.

The vocabulary of the game is claimed to be over 400 words and, as yet, I've had no

difficulty in communicating. A great deal of time has been spent making the location descriptions long and varied enough to maintain the atmosphere. That said, I've also yet to find a Melbourne bug like those that plague *ShadowStar* and *The Hobbit* — *Mordor's Quest* has done a lot to remove my faith in the ungodly adventure — it's a good, solid text adventure.



The Classic Adventure continues...

MORDOR'S QUEST

Finally, before I get back to the spacelane, I'd like to thank you all for your letters — please keep them coming — particularly Tim May's review of *Crackdown* which is an excellent text adventure written by him called 'Crashdown' which is a joy to play and deserves a plug here. It can be obtained from Supersoft, Winchester House, Caltham Road, Horley, Surrey RH1 2XJ.

A list of new job in your letters and on the phone has led me into reviewing software and writing for magazines and I tell you about the necessary skills of literary genius, wit, chutzpah, innate good looks, mundanity, etc... seriously though, and less in how your advertising anecdotes — so much so that we're offering prizes of tape copies of *Mordor's Quest* for the first dozen most interesting or amusing entries chosen by our 'Imperial panel of experts', so hurry up and put pen to paper.

Now finally I hope to find space for some hints and tips so let us know what you need to see! ■

- COMMODORE 64 -





Elite – the ultimate, award-winning space challenge.

Once the privilege of BBC and Electron owners, Elite now takes a giant leap forward – onto the COMMODORE 64. (There'll be versions for the 48K Spectrum and Amstrad soon).

OUT IN DEEP SPACE, THESE REVIEWERS FACED THEIR TOUGHEST TEST.

Already tested by the intrepid explorers of the Commodore press, here – breathlessly – are just a few words from their advance battle reports.

"The Final Frontier?"

(Mega Game, Your 64, June 1985).

"My favourite... as absorbing and challenging as the original."

(Commodore Horizons, June 1985).

"To explain every element of Elite would take a book... you'll run out of energy long before Elite runs out of things to show you."

(Commodore Computing International, June 1985).

"A brilliant game of blasting and trading... truly a mega-game...the game of a lifetime."

(Gold Medal Award, Zzap! 64, May 1985).



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State of the Union— state of the art

Geoff Brown and Tim Charney of US Gold run the highest-profile software company in the UK — yet the software comes from the States. Christine Brakine finds out why

"IT'S the thrill of getting into the charts that attracts me — getting the titles in there and watching them climb up. I was an unsuccessful musician for ten years, and all I wanted then was a chart hit."

So says Geoff Brown, who, as managing director of US Gold, is certainly enjoying chart success these days. Software charts have been heavily enjoyed by musicians for a long time now, but since US Gold's titles became strongly in all of them, it's probably fair to assume they're not too far wrong on that score.

US Gold is run by Geoff and general manager Tim Charney. If Geoff comes across as the more creative thinker of the two, Tim has his feet firmly planted on the ground. He has a strong track record in home computers, having worked at both Commodore and Gamespot.

The company was started by Geoff and his wife Anna, almost by accident, as part of their main

business, Centsoft, a software distribution company.

Along with the usual hits of the day, a few Acid titles straight from the US were tickling

through to Centsoft. Unfortunately, they never tickled out of Centsoft into the customer's pockets — at £29.99 they were far too expensive despite their very high quality.

"Everyone liked the stuff, but selling it was a nightmare," said Geoff. "Then when the Commodore 64 began to become popular we began to import, for that reason, because the 64 software had to compete with British titles, such as Diamondfire, and the need for a price cut became even more urgent.

"We approached companies such as Disksoft and Remco, we guaranteed them volume sales, in return for allowing us to manufacture package and set our own price. It may like stealing Maserati Beeees with only one leg — they simply weren't interested."

Beachhead

Geoff bundled and battered the two US companies into submission. He eventually managed to negotiate manufacturing rights from them as well, which meant that the newly invented fast trading system could be incorporated. The product began to move.

In January 1984, on a trip to the US, Geoff signed up to Microgenetics (renamed for strength simulation power) and a tiny outfit called Access.

"There were just two guys in one room, and no one had ever heard of them, but they did have a title called Beachhead, which I thought would do well in the UK," explained Geoff. Deals were signed with both Microgenetics and Access. Centsoft now had delivery rights to the products of four US companies, all of a quality rarely seen on the Commodore 64 in those days.

"So far he had all been a terrific uphill struggle just to sign the deals — now I had to make sure it was worth it by selling the games."

Geoff reckoned the best way to promote the titles was to give them a corporate identity — and the name US Gold seemed to fit the bill.

He was right in fact, Beachhead, as well. The game became largely successful abroad overnight, and as the games market in the UK began to slow down the American software houses realised that they would need to export their packages and open up new markets to keep growing. US Gold was formed under such efforts of American software.

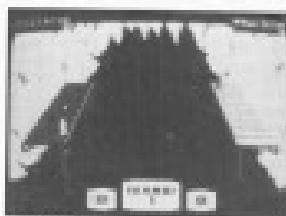
By this time, Geoff and Anna's creation was



Ghosts — the game of the year



Tim Charney (l) and Geoff Brown — "We jointly oversee our high standards"



Mickey's Space Adventure

beginning, Frankenstein-like, to get out of control, US Gold's catalogue has changed; they had done absolutely nothing about Britain's biggest selling machine, the Sinclair Spectrum, and Comshare, their original business was beginning to suffer.

Each problem was tackled in turn. To prevent the corporate identity idea, subdivisions of US Gold, such as All American Adventures, Rainmaker Simulations and the new educational label KIDS were created.

Games:

They approached Ultimax and Ocean regarding licensing and conversion of the titles. Ultimax took up the idea with enthusiasm, and took the process of conversion work and advertising work from the half-passed Geoff and Anne Brown. This move was important not just for different machines, but because with the increasing sophistication and programming length of the US titles, conversions from Commodore disk to cassette were becoming less straightforward.

Finally, to meet the demands on their time, they approached Tim Cheaney to join them as general manager, which he did in January 1985.

The process using US Gold domestic software but as much as GACI, but for Tim, it's become clearly massive sales.

Selling is Tim Cheaney's forte. He joined Commodore early in 1982, and was one of the first with the Vic 20, at a time when most

people thought computers were only for the bottle to later apart and rebuild again.

In August 1983, he moved to Computerland as sales manager, and he stayed at Computerland until the latter end. "People used to keep that the US computers may not have been popular in Britain but we had large markets in Ireland, Scandinavia and France," he remembers.

After Computerland, he returned to Commodore as national account controller. He remembers admiring the excellent software appearing from US Gold at the time, and needed very little persuading when asked to join the company.

After the trials and spills of Computers and its Lynx, says Tim Goldilocks provided little in the way of challenge by comparison?

"Well, yes, it's certainly true to say that I had no idea how many more powerful US Gold would turn out to be," said Tim. "Like again, we're just as vulnerable here as anyone else. We're completely dependent on good US software continuing to come through. But then, it doesn't necessarily follow that all good American software is going to come to UK stores."

Apart from the progress made by Goldilocks in the early days, US Gold do use these people in the US, working on its behalf to ensure that the best doesn't just overshadow the lesser. Disney and Lynx deals were "smooth" by their US counts.

The Lynx contract took over existing and forthcoming titles, so that *Impossable Mission*, *Flight II* and others first imported to C64 will be reprogrammed to include the familiar US Gold badge style logo. *Summer Games II* and *Winter Games* are due out from US Gold this autumn on both disc and cassette.

Conversion

"One of the problems we are increasingly finding is that cassette conversion is getting difficult," said Tim. "On Summer Games II and Winter Games we are going to have to load in events separately, as on the other versions. Obviously there's much less satisfactory on cassette because of the loading time. Some of our RBBM titles such as *Mickey's Space Adventure*, simply don't convert well and will only be available on disc."

Mickey's Space Adventure is part of the transom that Paul Drury and US Gold pulled off last spring. It is an unusual offering for the company in that it gives US Gold the right to develop games based on Disney's *Goof and Black Condens* — previously the company has only published racing games. The deal also includes *Star Wars* (Darth Vader's children's educational titles *Wheely the Pook in Hundred Acre Wood*, *Donald Duck's Pigropead*, and

Mickey's Space Adventure.

US Gold's regular liaison with Disney means that the company will be releasing the computer game based on *Diamonds*, the new Steven Spielberg backed film. *Diamonds*, the film, involves a gang of children forced with long summer holidays, who hear stories about buried treasure, and set off to trace it to a network of underground tunnels and caves. The plot sounds like a game programmer's dream.

Interestingly enough, US Gold's *Goonies* game will be released here in September although the film is scheduled for a Christmas run, so the video will beat the movie by a good three months.

By Christmas, US Gold plans a catalogue of around 150 titles, including conversions to Spectrum, BBC, Amstrad and even Intellivision. Is there not a danger that some US companies might feel their products will get lost in the sheer size of US Gold's list?

Visibility

"We do try to ensure visibility by advertising titles separately, and not bringing out huge batches of games at any one time," said Tim. "We work out the advertisements and what sort of ad space should be for each title quite separately. But, again, you can't deny that the titles are competing against each other — we can't stagger launches so that the games don't clash."

The company also has two other traps ready by its side for 1985. *Breaker! Breaker!*'s much liked *Kangaroo Kart* simulation will be available from US Gold on the Commodore 64 this autumn. It will be interesting to see how it compares with Melbourne House's immensely popular *Exploding Kitt*.

Secondly, the company is looking at possibilities of producing an official "World Cup Football program to coincide with next year's World Cup in Mexico."

A popular cliché this summer is that low software sales are ensuring that the young companies are getting stronger and the established weaker. Tim Cheaney reckons that so long as the American companies can continue to retain quality entertainment software, there's no reason why US Gold shouldn't grow from strength to strength. But this emphasis has to be on the word quality. As Geoff Brown says, "We could go and pick up hundreds of programs from America — there are so many being around, but they all have to be of a very high standard — that's what we pride ourselves on."

COSMI



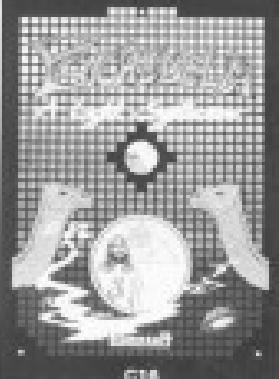
MINTER

The world's funniest programmer turns his back on children's comics and starts a series for CH... anything could happen!

GREETINGS again, this time from the paper pages of *Comicseller Magazine* itself. I enjoyed writing for Zzap!, but it seems they didn't like my newsletter so I'm afraid I put the CHOPTP... just I don't mind at all, I'm still getting through!

Confessions of a Computer Punkie... ...I've had a month or quite a while now, and up until the Comicseller show I didn't really notice much, but I logged on the week before the show and... well... I haven't been to bed before 2am since! In fact since, and I'm definitely in line for a mega-phew-ball next quarter.

The result is this thing they are calling



CHOP

Chopin. You can go on, upload frames into a directory, anyone caught around reads them and uploads their reply which you can read immediately. Sort of like on-line CH but with a larger user share and not so many regulars (although there are some). It's nice to chat you can send files, graphics frames or even programs, and that several people can join in the chat at once. It gets quite lively, there are several hard-core late nighters who you regularly meet (there's even a group of late nighters), that's YAK, AWTCHOP, RAPTE, CHOPTER, YETI, etc then there's the famous Tug with his sheep and Roger's cat as mouse demon... Many people have their own little directory somewhere (most's called YAK'S HAIRY BIT) into which they upload demos, graphics, anything interesting that people may want to see, and finally for this too. You can wonder about the database at will downloadimg add'l/bits/demos of whatever you're interested in, then logoff and try them out. Of course you can buy commercial software too in a special area called Software Park, and more

of it can be used to disk or tape therefore bypassing the "Is it a .COM disk yet?" dilemma nicely. And anything which can not download and claim yours has got to be broken!

The only bad things I can say about the Net are that it does slow up a bit if you go on and there's a lot of other users about (like say a Net afternoon) but if you're like me you'll do most of your "surfing" at night... which leads me onto my other gripe: it's staggeringly addictive (the bugs under your skin tickle you with that!) and you'll have to watch it if you're not in cap that bugs please tell.

If you're considering going Pernice, the

SHEEP IN SPACE



advice of the Yik is Go for it if it's 2000AD or I'll get you on the Chopter at 2am!!!

Yak's Garage... Well I got my copy of Elite up, sort of sorta, but it's just not *Star Raiders*.

Seriously though, it's well put together. If you liked it on the Amstrad then you'll love it on the 3D, the clocking sequence is hyper-hyper, especially if you're a Clocking Computer and you put that new 3200ASIC into the computer docks at breakneck speed



...so the

recom-

mendation of the

sheep Dynasty web-

site. Mark you, the

clunking computer

YAK has known

to blow it up update your

monitors all over the side of the

space station, and I'll still

try to see some "real" battles in

Star Raiders instead of the old ones,

drawn-in-the-middle-of-the-screen jobs

we got at the moment... Stun graphics

are only minor blemishes of personal taste

though. Elite is the 'it' in every list of

impressive as it is on the books...

All this talk of single-player

fun makes me feel

the Yik's sat on

and constantly

playing away in *Invaders*, Moon Cresta

...you know, the

end-lander game which comes

out in the Canadian era when

you blazed on little hellish

balls and had to make your

workers dock every now

and again. I know it's only

a simple plug-and-go but

will the Yik keep play-

ing that off & no resistor

...oh yeah! Incoherent

now about a few musical

notes up this page but

before we go further...

...Still into music

conversations I now

got that Crystal

Castles I was on

about, and boy is

it nice of a

little sing-a-long?? But in this case, I played

the YM version

while then

walked up to the

actual piano in Noddy's

cupboard for

Ruth and

immediately

screamed six times

as much as I

ever managed

on the car-park

previously...

that shows a

really good am-

munition, when you

can practice on your

YM version and keep

the benefits in the muscle

I hope someone else in

Hemlock

R MANIA

good a job with that megamaze... **Steve Shadley**
Shadley made parts of the UK's first game - *the Link and the Minotaur* - himself. Many more UK games have disappeared into Shadley's electronic puzzle...
The UK has also well impressed by what he says of Mattel's new *Kong*. By now, at the Commodore show... great graphics on CDROM music too, and it's plus unique in that it contains software speech and animation simultaneously... although you can turn this off, even it does eventually sound like the Doof of the Darkstar but if you turn into the survival arts site, currently in the works there this is really good.
Mike Blacker... I now have one of the Hercules Machines, the Amstrad ST... and WBLI. What says by that one, like finally Arranging... Still, Commodore isn't doing too badly either. Until 128 looks like being the very first monitor on the market and we're nervous already... partly because all the STs look like being the very first monitors. At first I must admit the ST convinced me as I didn't see much in the Commodore's offering, but the more I look the better it gets. In 128 mode you get

... enough of that area, many Master HiPs have disappeared into Shadley's electronic puzzle...

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the best. Back this side of Alpha Centauri with lots of cursor stuff like commands for 500+ sophisticated tracks, plus the clock and therefore your program can take as fast as the 64. Plus you get 64 modes so you can still play whatever turns you on, then if you want, be magnificence you get CCPM and the 2080 mode. At around £1000 that's pretty good in the Yakkabaka, the only real problem you'll have is whether to go 128 colour or the less expensive C64 version of also not having to buy that much new stuff! I start exploring your extra power at 16MHz with the 2080

ST (Amiga's midrange ST; not much software at first, but it's well prepared to wait 1 year after it flies your brain out)...

I'll be interesting to see what Commodore make of the new Amiga, two scheduled for launch in America this summer. I rather wonder whether Commodore will introduce it in UK until they can get the price right. £1K. High price apart, this machine sounds mega, 3 custom graphics chips, 16bit, 1000 colour, 1000x1000 resolution (16 per scan line they said), and if they didn't do something to increase raster interlace, all round again, topped by Amiga itself runs not really Impressionist, there's still the possibility of Good Commodore using similar chips in a lower-end model...

While on the subject of Amiga I must relate a weird encounter I had at ECCEmilia show... you Commodore employees, come up! Come and ask me if I'll be doing any mouse-driven graphic adventures as in Shadow Frost. What makes a perfect Amiga? Well, we're looking for really original software for the Amiga. So far, what original stuff is going to go with the Amiga to copy Shadow Frost? Perhaps he was surprised about the icons... but it goes without saying water pictures are 'icons' in a serious sense on the Amiga, so why not Commodore or Macintosh or something, why only graphical icons? There can't some weird thinkin' going on somewhere...

Anyways I think now, I got subgame 2 to do, if any of you Commodore fans get Swayze do give me a MIND, do it in L.A.M.A.s or go on that Chatline, I'm the guy with the bags under the eyes and not typing straight from too many interviews... ■



Demystifying the machine code muddle

Assemblers, disassemblers, editors, monitors, monitors — what are they, and how can they help you to master machine code? John Cochrane sorts out the confusion

THIS article is about machine-code. There, with just one sentence I have probably scared off! about half the potential readers of this article.

Machine-code, monitors, assemblers, disassemblers, editors, these are words which confuse and scare a large proportion of computer users because they have come to represent the "black art" of computing, something that only the "white hats" and computer geeks can master. I won't

make the mistake of claiming that machine-code is a simple subject, but I do say that with patience it can be understood by most programmers, and that most programmers will benefit from spending at least a little time experimenting with it.

I shall attempt to explain the differences between editors, monitors, and assemblers, which are the tools most frequently required when writing machine-code programs. The remainder of the article is a brief review of some of the commercial programs available, their relative strengths and weaknesses, and the ways in which they might be used. The programs reviewed are just a few of the many available but they represent a good cross-section of the types of programs on sale.

Editors

An editor is a program which allows you to enter and modify files of data. The Commodore 64 has a very good built-in editor which is intended for BASIC programs. File programs files are built up by entering a line at a time. These program lines can be saved, loaded, lined, and modified. In the same way assembly-language (it explains this term in a moment) files, bin files, and data files need editing when working in machine-code and the Commodore 64 BASIC editor is often used for this as well. When such things as state-

ments protection or file numbers or a block file-delete function are required then either the

built-in assemblers, these convert assembly-language programs into machine-code programs. An assembly-language program is one which is written using mnemonics or assembly language, or instructions, in words rather than the byte-codes actually used by the microprocessor. Thus, for example, the assembly-language instruction "LDX" which means "load X from memory" will be converted by an assembler into the numerical code 00 decimal (80 in hex). Assembler language programs are step-by-step descriptions of machine-code which can be understood by humans.

Many of the packages also include a disassembler. This displays the assembly-language equivalent of a machine-code program. The disassembler is usually included as part of the monitor program as it is a way of examining the programs currently held in memory.

Most monitors listed below the terms described above are often passed or used rather loosely. Most command-line monitors will also include an editor and monitor. Many monitors will include a disassembler converts machine-code into assembly-language and perhaps even an assembler. Many programmers and writers talk of machine-code programming when they really mean assembly-language programming. Assembly-language programs are called source-code in some literature; machine-code may be referred to as object-code, and so on.

File loader

If you want to start experimenting with machine-code you will need some of the software tools listed above, and probably more if you want to program seriously. It is possible to start with just the software already provided



Software tools make it easier to get into machine code — but which do you need and how do you choose the best package?

Commodore editor has to be expanded or replaced with a new editor.

A monitor is a program which is used to directly examine the computer memory, to make changes to the memory, and to keep track of what the microprocessor is doing at various times. Most personal monitors allow you to do additional things such as copy blocks of memory from one place to another. In principle, a monitor is all that is really needed to set up and run machine-code programs. In practice, however, monitors are too tedious to use for all machine-code programming but are important for some operations such as debugging machine-code programs.

in the Commodore 64. As I have mentioned, the Basic editor can be used as a general-purpose editor; blocks of memory can be saved and loaded using the normal Basic commands, and PEEK/POKE can be used to set up data and programs in memory. Hex-borders are often reproduced in books and magazines which allow the writing of machine-code programs. Such programs are in fact primitive monitors. However the scope for serious programming is limited, and producing machine-code in this way is very slow.

The next step up is to write your own monitor, or even a full assembler, starting from Basic. This is quite feasible, as David Lawrence and Mark England have demonstrated with the Minnesota Assembler which includes a monitor, an assembler, a disassembler, and an editor. But such programs are generally rather slow to run. Also, machine-code rarely written

around Basic will tend to be less sophisticated, and hence less versatile, than purpose-built commercial programs and they can use up quite large amounts of memory and leave comparatively little for your machine-code.

Commercial

If you want an easy life and are more interested in machine-code than in finding out how the Commodore 64 Basic system works, then you will go far and buy a commercial package. Which one you buy will depend on your own special requirements and the depth of your pocket. I have listed some of the most important features of a number of representation packages in the table you will have to decide what it is you want to do before you can pick out the best package for yourself. If you want to delve into the depths of the Commodore memory but do not anticipate

actually producing much machine-code of your own then look for a good monitor if you intend writing commercial machine-code software of your own or just need something on a particularly complex program that you should probably concentrate on the more sophisticated packages.

I have included the Minnesota Assembler in the table, as it shows what can be done with a well thought out program entered from the keyboard. I have also included the Amiga Training Course produced by First Software because the assembler and disassembler, although somewhat simple, are included as part of a much larger package.

Do not place too much emphasis on any particular feature noted on the table, it is often possible to achieve a given effect even if a single special command is not provided. Also, the tables cannot tell the whole story about the strengths and weaknesses of each package.

Documentation is another important area. All the packages note that they do not attempt to teach machine-code to beginners but all should adequately explain what the package does and how to best use it. This is achieved with variable success. The Amiga instructions are easy to read and have a complete reference section, although if anything I think that there could be a little further explanation of the more complex assembly processes. The Dennis manual is very brief and offers very little by way of explanation but is at least complete. The Mikro Assembler manual is too brief and does not tell the software justify the user's help with the software to find out the limits of what can and what cannot be done. Finally, the manuals provided with the First Software products are translated from German and are very well prepared. Although there are a couple of areas where the translation is not as clear as it should be, the full descriptions and use of examples makes for a clear understanding of how to use the package ■

HOW THEY COMPARE

	Master mode	Std. Aids	Errors	Page 64	Std. Errors	Basic Assembler
Editor Facilities						
Auto line number				+		+
Disassembly	+			+		+
Break points	+			+		+
Memory dump						
Disc Directories		+		+	+	+
Monitor Facilities						
Program display			+	+	+	+
Memory hex display	+	+	+	+	+	+
Memory char. display	+		+	+	+	+
Display as printer	+		+	+	+	+
Fill memory blocks			+	+	+	+
Copy memory blocks		+	+	+	+	+
Compare blocks						
Load/save blocks	+	+	+	+	+	+
Variable save						
Switch memory banks						
Search for string			+			
Accept decimal entry	+	+	+	+	+	+
Hex conversion						
Execute MAC	+	+	+	+	+	+
Emulate subroutines						
Single step	+		+	+	+	+
Breakpoints					+	
Help				+		
Assembler Facilities						
Assembler in 64K (Memory 128K)	DMT	0	M	M	DMT	M
Displaced assemble				+	+	+
Shift assemble	+		+	+	+	+
Chain assembly				+	+	+
Print source file	+	+		+	+	+
Port assemble				+	+	+
Label length control	0	any	0	31	0	any
List labels/variables				+	+	+
Assembly (Disassembly) (Logical) (Bit)	+			+	+	+
Comments						
Comments (Hex)	HDEC	HD	H	HDEC4	HDEC	HDEC
(Decimal) (Binary) (Octal) (C64M char) Labels						
Search for string				+		+
Search and replace				+		
Disassembler Facilities						
Decode code				+	+	+
Find disassembly	+	+	+	+	+	+

Package: The Amiga Training Course
Price: £50 (inc.)

Supplier: First Software Ltd, Unit 208, Horseshoe Road, Pangbourne, Berks, Tel: 07347 5244

Package: Dennis

Peter O'Riordan, £18 (inc.)

Supplier: Intercom, Micro's, London House, The Green, Tadley, Hants, Tel: 07365 71145

Package: Z80 Assembler

Price: £15 (inc), £15 (disk)

Supplier: Crystal Computing, 125 Sandley Road, Cheltenham GL1, Gloucestershire, Tel: 0285 261 6687

Package: Mikro Assembler

Price: £50 (cartridge)

Supplier: Supersoft, Winchester House, Canning Road, Weymouth, Dorset, Tel: 01-861 1166

Glorious colour

An extract from Radio West's *Authoritative Programming: the Compendium* 64

LITERATURAS) user-definable characters is essential in getting the most from multi-color mode. However, the general idea is fairly easy to grasp. It is another *Connexions* compromise. In order to get more color into the screen, resolution is cut in half. Below is a discussion of how this works with ordinary graphics; the principle is the same in high-resolution mode.

Normally, a "row" in a character definition shows up in the foreground colors, and a row shows up in the background colors; usually four colors are obtainable within each row of character area. Multicolor mode allows four colors to be selected per character, at the cost of halving the horizontal resolution. Instead of 8 bits/byte, it offers 4 bits/byte "wide" bytes, each of which can take one out of four colors.

Multiblock mode is enabled by setting bit 4 of PIC12 register SREG to 1. This is done by using PSEN#₁ TSTZP#₁ TSTZB#₁ (see *multiblock*, PSEN#₁ TSTZP#₁, TSTZB#₁). The following command restores back to normal mode:
PSEN#₁ TSTZP#₁ TSTZB#₁ ANDL#₁ (see *multiblock*, PSEN#₁ TSTZP#₁, TSTZB#₁).

Enrichment

The above POKER-mode and double multiplier mode photons, over the whole tool box, but it must also be enabled on a character-by-character basis to have any effect. This is done by the value in the corresponding color MAC location. If it is from 0 to 7, then the character appears in ordinary mode; and if it is from 8 to 15, then the character will be in multiplex mode. In other words, bit 3 in a color MAC location determines whether the corresponding character is in ordinary or multiplexed mode. Thus, the same key simultaneously display multiplexed and ordinary characters.

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Bit Pattern	Color Specified By	Address of Register
0-0	Background 0 color register (lowest background colors)	\$1200-\$1203
0-1	Background 1 color register	\$1204-\$1207
1-0	Background 2 color register	\$1208-\$120B
1-1	Lower three bits of under R/M (parameter colors)	\$120C-\$120F

Table 5

in several colors, including the less saturated Complementary colors. Enable multicolor mode with the POLICE given above. You'll see that characters in black through yellow are unchanged, while those in orange through light green are distorted, because bit 3 of each color RLE16 value is set.

The source of the colors in each two-dot unit is shown by table 1.

[Back to top](#)

The three registers can take values from 0 to 15; the three bits specified by value #A281 select values 0-1. Notice that while maintaining #F appear as the background colour whether the display is in standard or multicolour mode. Note that the border colour is 23200 is independent of the background colour, unlike VIC-20's multicolour mode.

It follows from this table that an escape (Commodore key-BLK) character will be displayed as black when underline mode is enabled — try it with several space blocks in *Compo*. Similarly, a light green character will be green.

Calculate how the change in A is defined in section 1.1.

The first illustration shows how the definition is interpreted in normal mode; one display in the background color and one display in the foreground color, specified by the character's colors. It is set.

When using multiple colors, only the character color can vary from character to character. Therefore, when designing multi-layer graphics, when the three colors you wish to spread meet widely on the screen, and let the character color vary locally.

Assuming the 64 has the power-up values given (PC4=1, S1D=0), the interruptable multicodec mode. All characters will be displayed.

multicolor match, since their entire RMM value is greater than 1. Assuming the relevant pigments have their pure up values, RMM will show up as dark blue, RCL as white, RCL⁻¹ as light green, CL as a dark blue (produced by the pale blue value with the J-dropped off). This is what the colors should be but they may not show up correctly, depending on the TV screen.

The cursor disappears because the reverse character is a block of bits in the pattern 11; the value is given in color RAM and thus shows up in monochrome mode as dark grey. Type CommandKey-**GRF** to make it disappear; pressing **W** will continue in monochrome mode. **CTRL-GRF** will also make it disappear, and causes printing to continue in standard mode because of the different values RAM settings. Enter **ENTER 3128L** to make **BS**, as well as **BL**, white; the individual characters then contain large areas of white. Type **CommandKey-#HT** followed by a few characters; very large areas now show a white, as **BSL** and **BL** and **CR** are all white. Usually, at certain, certain memory values will be used. **CTRL-#HT** will select a temporary color value less than 8 bytes later and then continue with further characters, then display as standard blocks. Because of the value RAM value, and are unaffected by them, and more certain.

These monochrome characters have a clearly perceptible, since they have half the horizontal resolution of standard characters. They can be used for decorative borders and designs and for graphics. You may need to experiment to find the best combinations of colors for this application. They are easier to use than multi-color characters and take up no extra space in RAM. Finding characters which look right can be difficult, though.

10 of 10

With some work characters in multicolor mode can produce impressive results. For example, RGB1 may be set to CL and RGB1 and RGB2 to 8 and 14, giving orange and light blue and the local colors on a medium gray background; otherwise, say, a gray sky, orange foreground, and light blue middle-distance, with distant objects in any of the eight main colors.

The following BASIC program lets you experiment with all combinations of B60, B61, B62, and C6. It displays above the asterisk character an index, either at the top of the screen in standard mode and again below in underline mode. The function keys D, E, F, G, H, I advance the values in the three display value and the upper RAM of the underline mode characters.

You may prefer to experiment with `background-color` in two colors only; if so, modify the program to `SPAWN` the background resources with it, and make the function keys logical.

Listing 1

```

180 POKE 51048,1024,A$1274
200 PRINT "A$1274"
201 FOR J=0 TO 255
202 POKE 1024+J*2,POKE C$0+J*2,0
203 POKE 1024+256+J*2,POKE C$0+J*2,0
204 NEXT
180 POKE 51048,1024,T$0+J*2,0
200 C$0=CHR$(J)*" " T$0=CHR$(J)
201 IF S$0="(" THEN POKE 51048,1024+J*2,A
202 IF S$0=")" THEN POKE 51048,1024+J*2,A
203 IF S$0="[" THEN POKE 51048,1024+J*2,A
204 IF S$0="]" THEN POKE 51048,1024+J*2,A
180 IF S$0="P$01" THEN 200
200 FOR J=0 TO 255:POKE C$0+J*2,0:NEXT
201 FOR J=0 TO 255:POKE C$0+J*2,0:NEXT

```

190 END 200

Listing 2

```

230 IF X$0="P$01" THEN POKE 51048,1024+J*2,A
231 K=15
234 IF X$0="P$02" THEN POKE 51048,1024+J*2,A AND 192
1 POKE 51048,1024+J*2,0
237 IF X$0="P$03" THEN POKE 51048,1024+J*2,A AND 224
1 POKE 51048,1024+J*2,0
238 HC=PEEK(51048)+K

```

on a similar statement. The AND 15 is necessary to remove the high nibble, which varies. Also, try replacing line 230 with 230 HC=15-N.

Multicolor mode is probably the 64's most popular graphics mode. Although its theory resolution is 16x16, its practical TV limitations mean that 128 individual colors are that is, all sets of 8 bits) really distinguishable across a TV screen. The 64's "Uncommon" key + character, for example, is one made of alternate Ps and Ts composed of alternating 0s and 1s bytes. This is why multicolor characters often look similar to their normal equivalents, and why normal characters — Commodore key Z, for instance — often appear thicker than you'd expect.

Even with multicolor mode enabled, characters don't have to be displayed in multicolor mode, which adds to the mode's versatility. Programs can be developed using PRINT and/or POKE to move characters around; such programs will work just as well if the graphics are rendered in monochrome form. This requires extra work, since character definitions must be loaded into RAM and the VIC chip needs to access them. However, this is off easier than full Multicolor.

Bitmapping

Extended background color mode is a relatively new display mode, and the VIC-20 has no analogous mode. It cannot coexist with other modes. The screen blinks out as long as multicolor mode or bitmapping is also switched on. Like multicolor mode, the full graphics set is divided by four to allow more colors. Usually the top half's background color (POKE 51265) over the whole background, and though each of 1024 characters colors can vary, the background has to be in common — though this is diagnosable by including solid blocks of local color. Extended background color mode alters the background and colors of each character to be chosen from one of four colors. Dots are interpreted single, not

in pairs like multicolor mode.

The trade-off is only 64 characters can be displayed at one time. The two highest bits of each character determine the background color, chart table 3.

Table 3

High Bits of Character	BC Color Specified By
0 0	Background 0 color register
0 1	Background 1 color register
1 0	Background 2 color register
1 1	Background 3 color register

appear the usual light blue on dark blue. Now try \$A\$10 full letters; they are unfilled on the screen, but their background is now white, governed by \$B\$2. The POKE codes for A and SHRTA alter bit 64, so the upper character is displayed as extended background color mode.

Type CTRL+RS251 followed by each SHIFTed letter; now the background is red, like the cursor, because bits 70-80 select register \$B\$2. Finally, without pressing RETURN, type in a few SHIFTed letters like \$B\$05\$A\$10\$F to see how each byte shifts, showing BC\$0's own background. The result is a bit hard to read on some sets. Try POKE 51265\$D:POKE 51266\$E, setting BC\$0 to black, white, yellow, and cyan, with red interring (POKE 51267).

Highlights

For a further demonstration, add these four lines to the "Multicolor Mode" demo program and run the result. Listing 2.

Extended background color mode can now be selected by typing R, and multicolor mode by typing M. Pressing B advances the value in register BC\$0, while the other keys function as before.

You'll see the reduced character set and extra background colors clearly. The small available range of character shapes makes this mode unsuitable for most purposes, but if you're content with numbers, uppercase letters, and punctuation symbols, extended background color mode allows colored highlighting which is otherwise much harder to program. The SHIFTed, SHIFTed, reverse, and inverse SHIFTed characters are ordinarily white but will be displayed on background colors as stored in \$1281-\$1294. Note that

unSHIFTed space, comma, appears as the black background color.

Programming the COMMODORE 64

The Definitive Guide

Steve Cutler, Ed.

The comprehensive reference guide to the Commodore 64 computer system and software.

Programming the Commodore 64 is available from Bitwise, 2nd Flr, Partridge Green, nr Horndean, W. Sussex, price £14.99 - 21 ppgs.



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Superscript

The Intelligent Word Processor

If you need a word processor that gives you word processing... this is the ultimate." Trevor Bellamy, Commodore Magazine July 1988

What is Superscript?

Superscript is a word processor, spelling checker, calculator and management facility of more packages. It features graphics and full compatibility with the Apple II, Commodore 64, BBC Micro, Amstrad and even MS-DOS. Superscript is a stand-alone and easily enhanced version of the popular floppy disk based word processor that has sold over 100,000 copies worldwide, so you know you can rely on it.

Simple for the beginner

For anyone new to word processing, Superscript's simple command menus and its comprehensive menus.

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Oranges are not found in Superscript, you can replace them with

Potential for the experienced user

Superscript also gives you the ability to create objects automatically during your document composition or later on completion. This means that a single keypress you can distribute commonly used phrases into addresses from a database, lists of information or reuse a pre-programmed sequence of instructions. That is intelligence!

Editing options

Superscript gives you the editing options of a professional word processor, with facilities manipulation for cut and paste, margins or text margin modes, search and replace with pattern matching and optional case discrimination, backspace to correct for single words or paragraphs at a time, and much more.

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Superscript allows you extend your editing line up to 256 columns for word documents that require punctuation, and with recallable lists it's easy to enter punctuation and symbols in documents. You can also use the built-in dictionary of over 100,000 words of standard English or one of four American Englishes. As well as many other features like bold, italic, underline, double strike and superscripts, you have the ability to underline, underline or over-underline text.

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Plenty of easy to learn Superbase in the superb 6.03 page-orientated manual. Thoroughly packed full of tips and examples and uses a right-on-the-point through-accomplished programming, while the reference section is a model of completeness. You apply the "natural" C-style logic, then choose from extensive comprehensive menus.

Easy to use -

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Reflex

This 64 program comes from Paul Moyer of
Houghton-Mifflin.

REPLICA is a two-player game which tests the speed of your reactions. But remember: Every such action moves this screen. They perform combat in player one; joystick, press one; they write in player two; joystick press one.

When the word DROWNS appears, press pause key button as fast as you can. The two players achieve non-violence with the piano. This game includes sound effects and simultaneous fading border colours.

Relative problems

I OWN A 64 and a 1541, and I'm very interested in business and graphics programs. I have tried to design a program which will calculate and save expense details, but I haven't been able to get through it, because I don't know how to work with relative files. Could you give some suggestions for such a program?

F Alcott

IT'S NOT practical to give a complete program here due to lack of space, but here are a few hints. The main menu should have options for FILE CREATE, SELECTED ENTER, READ, AMEND, DELETE, PRINT, EXIT and BACKUP. If you can program like this:

Injun trouble

I AM TRYING to write a program for the Vic 20 in which data records (parcels) are fixed segments from a base. I can list these by pressing keys 1 to 9, but the trouble arises from the fact that the screens stay at the top of the screen, and I can use the same screen over and over again... instead of just once. Can you help out?

D J Minter
Rockingham
Somerset

TO REMOVE the screens from the top of the screen, test the screen locations with IF PEEK(08124)=1 (selected = ABC turned), and then PEEK these locations with 32, to blank the screen out. The easiest way to avoid using the same routine again is to set up a smaller array using DATA BY. Then when you find the string which gets the key pressed == ABC == equals "1", set 32(L)=1, and if ABC = 1 just 32(L)=1, and so on. Then test for this condition with a line IF NOT(ABC)=1 THEN GOTO the line containing the original GET AB, which will allow areas once used. Avoid getting stuck in a loop with no way out by providing an exit routine in your menu.

single drive. You can have a relative file for each expense section, with the file being named after the subject — say FS. Next fix your maximum record length at 16, not exceeding 256. A subroutine will be required to ensure that the user input does not exceed that length.

An alternative is to have a file such as FS=EXPENSES.LIS to record length, but then just fill in, etc.

OPEN 2,200+1,-1,-1
OPEN1=1 will open a relative file. Records are written and read using record numbers, and the 16N will be split into 16Lines, 16Rows. Format using 16%N+N,256 and 16%N-N%256. Having input the data from the user as, say, 16%, then point to the relative file with OPEN1=1, etc.

PRINT 15, "P" + CHR\$
15=CHR\$(51) + (CHRS)
(N%) + CHR\$(0) and
PRINT #1, etc.

The CHRS(1) is the character number as created in the OPEN 1, 8, 1, and the last CHRS is the position number in the relative record.

Check the error channel after each read or write, and forgetting that ERROR# 40 can be expected on first using the file (see and ignore this error). ERROR# 40 is generated every time you expand the file to include more records. Use the maximum record number first, and you will only have ERROR# 40 once.

To read the file, use OPEN 2,200 and INPUT# 2,LIS. The same file can be used for either reading or writing.

Converting Vic 20 colour codes to work on the 64

I HAVE almost finished writing an adventure game for the 64, and have decided that I need an interface. Could you give a 64 version of the interface for the Vic in the February issue? Secondly, could you translate a few of the many common VIC 20 POKER, such as screen colours, volume and so on, into the corresponding 64 codes?

S J Nixon
Moseley

Stop moving!

I AM WRITING a machine code program for the 64 which requires a scroll routine. I can do the scroll fine, but I need to know how to use the interrupt to stop the lines from flickering and to keep certain parts of the screen stationary.

Stewart Colquhoun

TO REMOVE the flicker lines, suppose the edges of the picture fit putting it there in 160x160 in 8 bits where there columns) and the size in 160x160 in 8 bits where there (rows). This affects the screen appearance only, not the internal buffers. Alternatively, you can try masking the border and background colours. You will certainly get flickering if your pencil is too slow. You can use bitmapped graphics to control individual parts of the screen, but it's too large a subject to handle here — try Radio Mart's book mentioned elsewhere in this issue.

Loading screen

I READ with great interest the article on copying ROM to RAM on the 64 in the June CHI. I wonder if you could help with the problem of displaying graphics on screen while loading from tape — the ROM to RAM routine started the monitor. I managed to prevent the screen from flickering by altering the code

from 6429 to 6430. However, this subroutine prevents the machine from reading the saved data from tape. Your thoughts on the matter would be much appreciated.

P Denzil
Avalon

THE 64 ROM you referred to is in the middle of the common code for ensuring read and write. The reason that the screen is disabled while reading and writing tape is to speed up the process; if your cassette deck is off the beginning of alignment, that may explain the problem you're having. If you've changed the code to 640 (no operations), but did you also alter the code in 6430 to 640? I'd say 6401, 6403, 6405, 6406 makes the screen visible again.

1520 user group

I HAVE a 64 and a 1520 (plus printer), but there is basically no software compatible with the 1520 on the market. The 1520 has a lot of facilities such as line printing, four colour graphics, dithered printing and so on. I have found that there is a user group for the 1520 — maybe you can tell me more?

M Williams
Bury
A Chinn

YOU SHOULD contact

Steve Banks, 86 Blythe Head Road, Blythe Head, Stoke-on-Trent, ST10 6LA.

As for the coding VIC 64

Colours	VIC 64
Black	8
White	14
Red	49
Cyan	56
Purple	72
Green	89
Blue	96
Magenta	109
Volume	4096-32768

Note the 64's sound abilities are much more complex than the Vic's.

Fun and games Summer 85

FIVE-A-SIDE

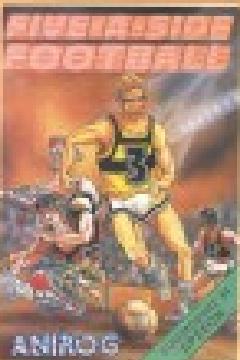
Cheering-whistling-shouting crowd with their banners aloft set the scene for a lively game of FIVE A SIDE played at a fast and furious pace where the skills of passing and shooting are as essential as speed. Match your skills against the computer at three skill levels or play against another opponent.

Before the kick off, the crowd give their enthusiastic support by singing "Here We Go".

Penalty shoot outs are one of many star features of this game.

CBM 64 £5.95 (cass) £8.95 (disk)

Available for Amstrad and MSX in early autumn.



OUT ON A LIMB

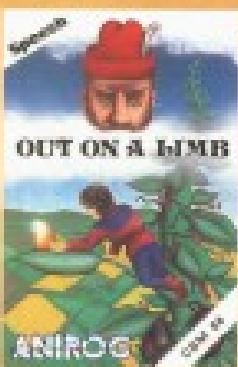
FEE - FIE - FO - FUM

I smell the blood of an Englishman

HA - HA - HA - HA - HA!

Will Jack be warned by the mocking snarling speech of the giant or will he continue his quest to retrieve the family fortune with nothing but his agility of mind and body to help him?

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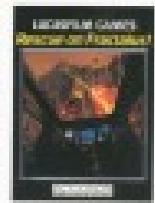
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